SEA for complex and dynamic decisions
- experiences with the Dutch National Water Programme -

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1. Introduction

Many countries face enormous challenges regarding water, which are related to the sector itself (quality, quantity, safety), as well as major challenges of climate change, energy transition, biodiversity, agriculture, urbanization, and social inclusiveness. This is certainly true for countries with urbanized deltas such as The Netherlands. The Netherlands is a small and densely populated country, lying in the Delta of 4 rivers (Rhine, Meuse, Scheldt and Ems) that flow into the North Sea. There is water everywhere in the Netherlands. The Dutch literally live with, near and even on water. As a consequence, there are many water challenges the Dutch government has to deal with.

Figure 1: The Netherlands and its main water system

To deal carefully with these challenges, every six years the Dutch government formulates a National Water Programme (NWP). The newest programme schedules all water management efforts on a national level for the period 2022-2027, as well as looking ahead to 2050 by combining several sub-programs. The NWP also includes the international obligations related to EU directives. A Strategic Environmental Assessment (SEA) for the newly-prepared NWP was conducted, aiming at providing the necessary environmental information for evaluating water-related objectives and NWP policies.

The NWP SEA provided the essential information needed for decision making. However, it also posed challenges, due to the highly-complex and dynamic policy context. In this paper we share our experiences in developing a SEA for the National Water Programme and how the SEA contributed to the decision-making process. We will focus on dealing with complex and dynamic policy processes and discuss the three most important results. We end this paper with conclusions and recommendations, and discuss some dilemmas in providing enough detail for decision making while also covering all relevant water related policy issues for the Netherlands.

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2. SEA process for the National Water Programme

2.1 Part of a wider stream

The preparations for the new NWP began mid-2019. The programme schedules all water management efforts on a national level in the period 2022-2027, and provides an outlook for 2050 by describing the ambitions for safety against floods, climate adaptation, sustainability, and water quality. The NWP also includes international obligations, such as the European Marine Strategy Framework Directive, Floods Directive, and the Water Framework Directive: each requires programmes with their own scope, standards and international alignment procedures, and scheduling. These programmes, which largely determine the scope of the NWP were already 'on the way' in 2019. Furthermore, the NWP covers non-mandatory topics such as climate adaptation and nature development in major waters.

In line with the EU SEA Directive, the Dutch government conducts SEAs for specified policy decisions that might affect the environment. This implies that the NWP SEA does not stand on its own. For instance, it succeeds previous SEAs for the Vision on National Spatial Planning, for the Plan for Underground Zoning, and of course for the previous NWP. Moreover, new SEAs will be conducted for such water-related plans as the Integral River Management Programme, the seventh Nitrates Action Programme, and detailed wind energy zones on the Dutch part of the North Sea. Besides, several project-level EIAs can be expected for projects involved in implementing the NWP. Clearly, the SEA for the NWP is embedded in a wider stream of environmental assessments, on plan *ánd* project level.

2.2 Challenging features and solutions

a. <u>Complexity</u>

The NWP is a highly complex document as it is actualized each six years, bringing together at that moment a diversity of initiatives, with different time scales of proposals, as described in section 2.1. To deal with this we structured the SEA process as given in figure 2. The process started with an inventory of proposals and an analysis of risks and opportunities. During the second stage we thoroughly discussed the more complex topics in small expert groups (pink balloon). Each programme within the NWP delegated a professional for the supervisory committee of the NWP SEA. A well-experienced consultancy company (Arcadis) was hired to prepare the SEA. In the background SEA experts and trainees supported the SEA process.

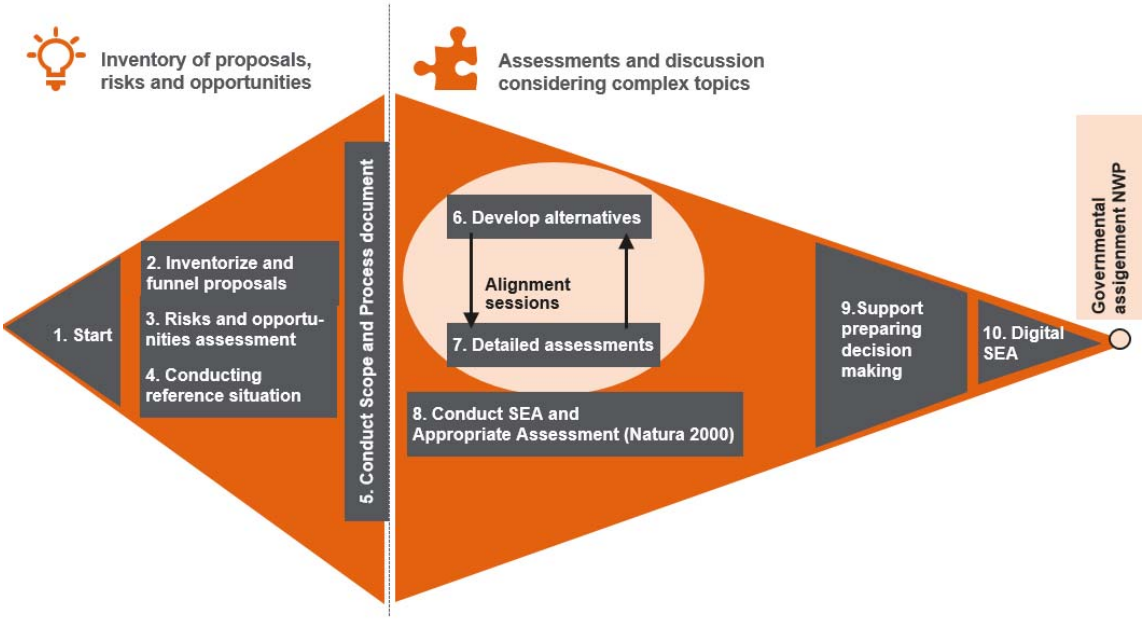

Figure 2: SEA process for NWP

b. Dynamic circumstances

The Water Programme itself was being developed during the preparation of the SEA. Solution: Different versions of the NWP were analysed within the SEA (at various points) throughout the development of the NWP. The policy proposals in the NWP were screened for concreteness / environmental impact, new or existing consequences, and - if so - whether these should be addressed. Ten proposals were identified as new or as a continuation of policy, but under changed circumstances. These criteria meant they qualified for assessment in the SEA – see Table 1. In quarterly meetings, input from the SEA was provided to the team that drafted the NWP.

c. Limited knowledge on SEA

The limited knowledge officials had on SEA and the critical role it could have, made it difficult to communicate and connect, as the writing process and the SEA process were organised by two people. Solution: a SEA training for the National Water Programme team was organised at the start.

2.3. The assessments

a) Goal achievement

Six national water policy objectives were key in the SEA: climate adaptation, flood risk management, freshwater, quality of surface water, groundwater (quality and supply), and shipping. The goal of the SEA was to forecast whether these six water objectives were to be achieved through the current policy framework, which relates to state-of-the-art methodology of Dutch SEAs (so called 'objectives-led SEA'). Any signs that objectives might not be fulfilled were taken seriously in an early stage of drafting the SEA. Any tensions between proposals or the NWP as a whole versus the objectives were identified, analysed, and drafted. The tensions were subsequently discussed in the SEA supervisory committee.

b) The impact of the relevant new policy proposals

The SEA assessed the impact of the 10 selected new proposals on water policy objectives (see figure 3), as well as the environmental impacts, cumulative effects in specific areas, effects on habitats (so-called Natura 2000) and the spatial claims in the water domain. Negative relationships between proposals and key policy objectives were reported to the NWP writing team. In some cases (for instance the 0/- score for upscaling Rijkswaterstaat's area for generating sustainable energy) this was made more explicit in the NWP text by describing how would be dealt with negative effects of such proposals.

c) Consistency with the National Spatial Policy

The SEA checked the consistency of the National Water Programme with the National Spatial Policy.

Table 1. Relationship between proposals and water goals

- = there is a negative relationship, 0 = there is a neutral relationship, + = there is a positive relationship, n/a = there is no relationship

Proposal	Climate adaptation	Flood risk management	Freshwater	Quality of surface water	Groundwater	Shipping
Moderate Peak Water Level Management IJsselmeer Region	+	0	n/a	0	n/a	n/a
Strategy Climate-Proof Freshwater Supply Main Water System	+	n/a	+	+	+	-
Active Groundwater Storage Management	+	n/a	+	+	+	n/a
Programme of Measures for River Basin Management Plans 2022-2027	+	+	0	+	n/a	n/a
Programmatic Approach to Major Waters	+	n/a	+	+	n/a	n/a
No Sale of Sand During Navigation Channel Maintenance in Wadden Region	+	+	n/a	0/+	n/a	n/a
Spatial Reservation 27 GW Wind at Sea	n/a	n/a	n/a	0	n/a	0
Infrastructure for CO_2storage in Empty Gas Fields in the North Sea	n/a	n/a	n/a	0	n/a	n/a
MSFD Restrictions Fisheries	n/a	n/a	n/a	+	n/a	n/a
Upscaling Rijkswaterstaat's Area for Generating Sustainable Energy	n/a	0	n/a	0/-	n/a	-

3. Three Main Results of the SEA

3.1. Offshore Wind Energy

The designation of new wind energy areas at the North Sea has been a politically sensitive issue. At this moment so-called ‘search areas’ give possible locations. To fulfil the obligations of the UN Paris Climate Agreement, half of these search areas need to be designated for providing the necessary capacity for wind energy. The SEA assessed these eight search areas. Clear no-go interactions between wind power zones and protected Natura-2000 areas were defined by conducting a so-called ‘Appropriate Assessment’ under the (EU) nature protection legislation. In subsequent planning more detailed assessments will be conducted. The knowledge obtained will be used in the subsequent process of locating specific wind areas at the North Sea (later this year).

3.2 Scarcity of space

SEA dealt also with spatial claims as ‘scarcity of space’ was a main discussion point in the SEA for the national spatial plan. Therefore, an important question was: how can the Netherlands combine all different demands for space as a result of: energy transition, climate adaptation, nature restoration and sustainable agriculture, while also addressing increasing demands for housing, industry, infrastructure and water management?

Firstly, to address these potential conflicts, the NWP SEA analysed which substantial spatial claims within the water domain could 'obstruct' each other. No conflicting spatial claims were indicated, as spatial reservations for water management were in place already (because of previous water planning).

Secondly, the SEA checked for consistency of the NWP with National Spatial Policy. Potential tensions were identified, such as: objectives for sustainable economic growth that might create possible risks for the water domain. Involving water managers in planning developments might offer opportunities to safeguard the water interests. In this way the SEA clarified potential tension between water policy and the spatial policy.

3.3 Water quality

Most emphasis in the NWP SEA was on the quality of surface water and ground water.
Despite a wide range of positively contributing activities for both ecological and chemical water quality, the current policy measures are likely to be insufficient to achieve objectives before 2027 – especially for regional surface waters and ground water. For instance, in Noord-Brabant province, a dense population combined with intensive livestock farming, industrial enterprises, and ground water abstraction will lead to water conflicts.

This issue was discussed with professionals during two sessions, which resulted in developing 15 possible measures for improving water quality in the SEA. These measures were called 'building blocks for supplementary policy'. Later in this year, policies related to water quality will be further developed and can build upon these building blocks resulting from the SEA.

4. Conclusions and recommendations

The SEA can be considered useful for decision makers for these main aspects:

- Especially for proposals where the assessments indicated negative consequences for the environmental, habitats or water goals the NWP policy texts were made more clear in how to deal with these potential negative impacts.
- The NWP SEA will be used in the process to designate new wind areas at North Sea.
- The SEA checked consistency between the NWP and National Spatial Policy. The SEA clarified potential tension and described actions for water managers to deal with these tensions.
- The SEA generated solutions for the complex problems considering water quality.

The previous discussion suggests the following practical suggestions for maximizing the potential impact of SEAs for complex and dynamic policy programmes and usefulness for policy makers.

- Clearly formulate/define the role of the SEA in advance: does it have to control and monitor policy or does it have to provide information to policy makers?
- Organize the exchange of knowledge and information with policy makers, for instance by involving the most relevant actors in a supervisory committee and by organising explicit discussions about risks and opportunities.
- From the onset, focus on the most challenging objectives: thoroughly analyse these and creatively provide new methods to contribute to the objectives.

5. Discussion

- Carefully structuring the process of preparing the plan and SEA is a way to deal with complexity. But within this structure there is need to be flexible to be able to deal with policy subjects that require more time. In our case the most relevant and political sensitive issues - Wind Energy at North Sea and water quality – required more time than initially planned.
- To conduct an SEA, it is necessary to make an overview of all (water) policy issues, goals, decisions, and their relationships. This overview is in itself a useful result for all(water) officials involved in the various policy programmes.
- Especially for policy plans that are frequently actualized (such as the NWP every 6 years), monitoring throughout the full duration of the programme might be combined with the SEA process (SEA follow-up of the current NWP, input for the next NWP's SEA – tiering, scoping and input data).

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